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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,413	10/26/2006	Toshihiko Ohtomo	14875-164US1 CI-A0321P-US	7418
26161	7590	03/31/2008	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			GUSSOW, ANNE	
			ART UNIT	PAPER NUMBER
			1643	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,413	OHTOMO ET AL.	
	Examiner	Art Unit	
	ANNE M. GUSSOW	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9-12 and 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/23/07, 10/3/07, 2/12/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election with traverse of Group I, claims 1-8 and 13, in the reply filed on February 4, 2008 is acknowledged. The traversal is on the ground(s) that the restriction between Groups II and IV-IX is improper because they have unity of invention. This is not found persuasive because the antibodies of each of Groups II and IV-IX would have different structures and as set forth in the restriction requirement, the claims lack unity of invention as set forth by Fukushima as cited in the previous office action.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 9-12 and 14-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on February 4, 2008.

3. Claims 1-8 and 13 are under examination.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The priority documents are not in English. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d), a certified English translation of the foreign application must be submitted in reply to this action.

Failure to provide a certified translation may result in no benefit being accorded for the non-English application.

For art rejection purposes in this Office Action the claims receive the priority date of October 26, 2006.

Information Disclosure Statement

5. The information disclosure statements (IDS) submitted on May 23, 2007, October 3, 2007, and February 12, 2008 have been fully considered by the examiner and an initialed copy of the IDS is included with the mailing of this Office Action.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Tahtis, et al. (Clinical Cancer Research, 2001. Vol. 7, pages 1061-1072, as cited on the IDS).

The claims recite a method for enhancing the activity of an antibody, which comprises making the antibody into a single-chain polypeptide comprising two or more light chain variable regions and two or more heavy chain variable regions linked via linkers. A method for enhancing the activity of an antibody, which comprises linking a first polypeptide to a second polypeptide by a linker, wherein the first polypeptide comprises the antibody's heavy chain variable region and light chain variable region and the second polypeptide comprises the antibody's heavy chain variable region and light chain variable region. A method for enhancing the activity of an antibody, which comprises converting the antibody into an sc(Fv)₂. The method according to any one of claims 1 to 3, wherein the linker is a peptide linker, wherein the length of the peptide linker is 5 to 30 amino acids.

Tahtis, et al. teach a method for producing a diabody comprising two identical scFv molecules – sc(Fv)₂ - in which the V_H and V_L domains are linked by a five amino acid residue linker. Tahtis, et al. teach the diabody had increased uptake relative to the F(ab')₂ fragment. Since the claims do not recite the specific activity which is enhanced, the increased uptake of Tahtis is an enhanced activity and all the limitations of the claims have been met.

8. Claims 1-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Orita, et al. (Blood, 2005. Vol. 105, pages 562-566, as cited on the IDS).

Claims 1-3, 5, and 6 have been described supra. Claims recite 4, 7, 8, and 13 recite the method according to any one of claims 1 to 3, wherein the activity is an

agonistic activity. The method according to claim 6, wherein the length of the peptide linker is 12 to 18 amino acids.

Orita, et al. teach a method for producing a diabody or sc(Fv)₂ against the thrombopoietin receptor comprising two VH and VL fragments joined by a 15 amino acid peptide linker. Orita, et al. teach full length antibodies against the thrombopoietin receptor have an absence or very weak agonist activity while the diabody has an agonistic activity equal to the natural ligand. Since the claims do not define the specific antibody having increased agonistic activity, all the limitations of the claims have been met.

9. Claims 1-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukushima, et al. (US PG PUB 2004/058393, PCT filed April 17, 2001, as cited in a previous office action).

The claims have been described supra.

Fukushima, et al. teach production of sc(Fv)₂ diabodies comprising two VH and two VL domains linked by a polypeptide linker having between 5 and 15 amino acids (figure 38). Fukushima, et al. teach the scFv antibody had 400-fold stronger agonist activity compared with the monovalent sc12B5 antibody (paragraph 306). Since the claims do not define the specific antibody having increased agonistic activity, all the limitations of the claims have been met.

Conclusion

10. No claims are allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNE M. GUSSOW whose telephone number is (571)272-6047. The examiner can normally be reached on Monday - Friday 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on (571) 272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anne M. Gussow

March 26, 2008

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/Larry R. Helms/
Supervisory Patent Examiner, Art Unit 1643